

SA-W651

SERVICE MANUAL

US Model



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm loads, both channels driven, from 40 - 20,000 Hz; rated 120 watts per channel minimum RMS power, with less than 0.9% total harmonic distortion from 250 milliwatts to rated output.

Amplifier section

Overall output

140 W + 140 W (front, at center/rear/woofer off, at 1 kHz, 8 ohms)
25 W + 25 W (rear, at front/center/woofer off, at 1 kHz, 8 ohms)
40 W (center, at front/rear/woofer off, at 1 kHz, 6 ohms)
50 W (woofer, at front/center/rear off, at 40 Hz, 4 ohms)

Harmonic distortion

Less than 0.9 % (at 1 kHz, 8 ohms loads, front: 140 W + 140 W, at center/rear/woofer off)

Output

FRONT SPEAKERS:

Accept speakers of 8 – 16 ohms

REAR SPEAKERS:

Accept speakers of 8 – 16 ohms

CENTER SPEAKER:

Accept speaker of 6 – 16 ohms

HEADPHONES:

Accepts low and high impedance Headphones

Speaker section

Type

Active super woofer (magnetically shielded design)

Speaker unit

Woofer: 20 cm (8 inches) cone type

Reproduction frequency range

25 Hz to 150 Hz

General

Power requirements

120 V AC, 60 Hz

Power consumption

270 W

Dimensions

Approx. 500 x 475 x 475 mm (w/h/d)
(19³/₄ x 18³/₄ x 18³/₄ inches)
(including projecting parts and controls)

Mass

Approx. 31.0 kg (68 lb 6 oz)

Accessories supplied

Feet (4)

Design and specifications are subject to change without notice.



ACTIVE SUPER WOOFER
SONY®

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

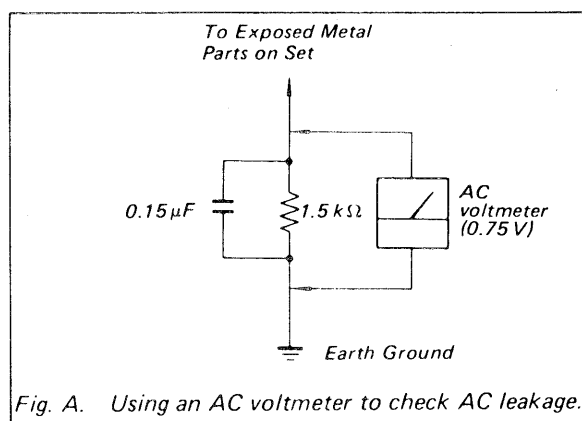
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



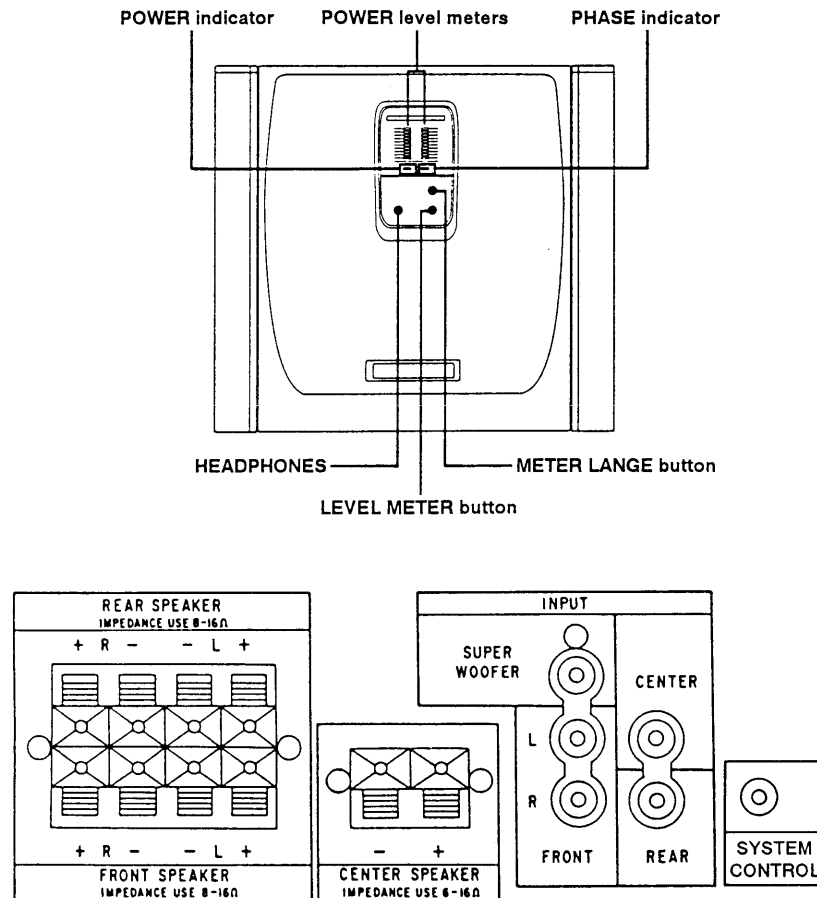
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

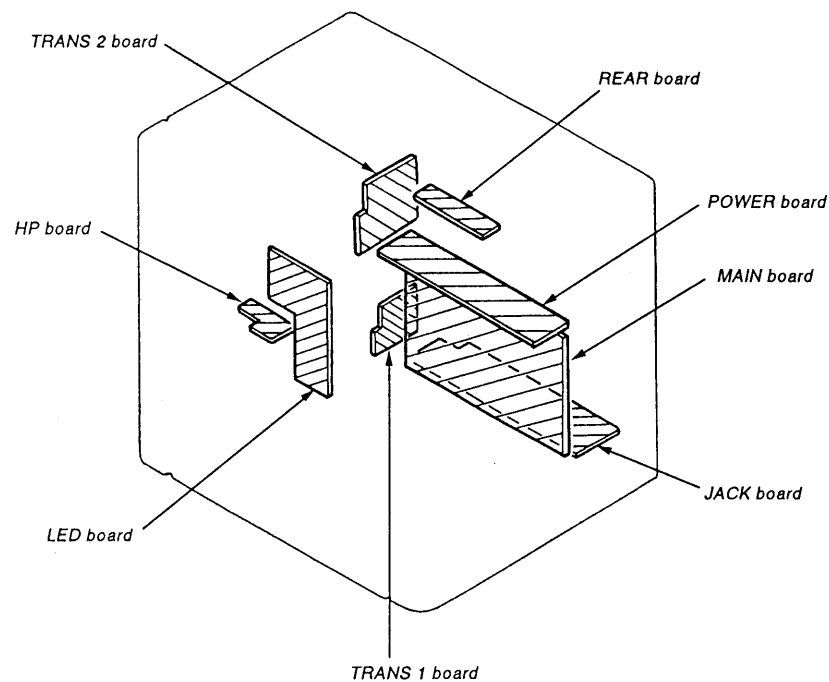
This section is extracted from instruction manual.

LOCATION OF CONTROLS



SECTION 2 DIAGRAMS

● CIRCUIT BOARD LOCATION



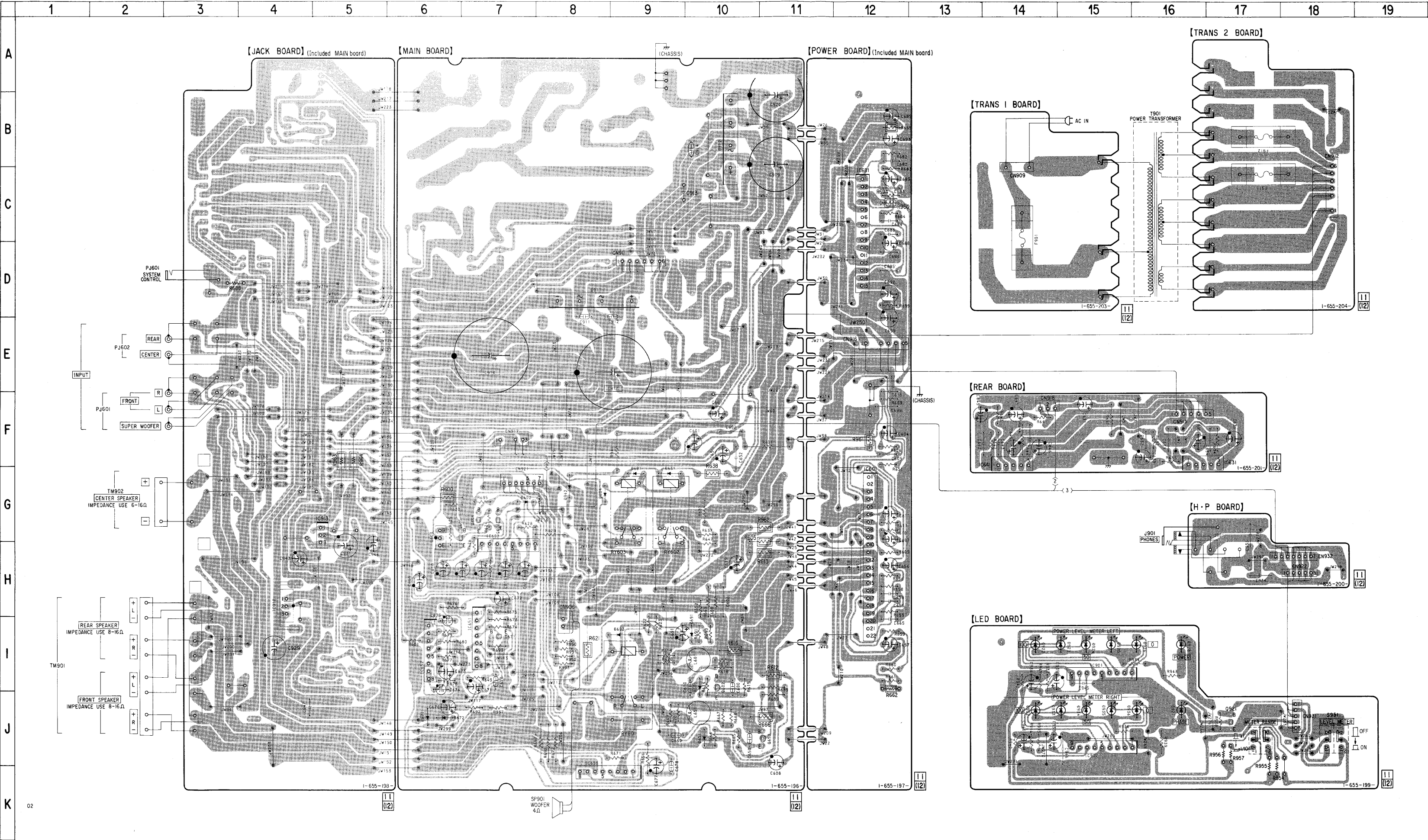
2-1. PRINTED WIRING BOARDS

- **SEMICONDUCTOR LOCATION**

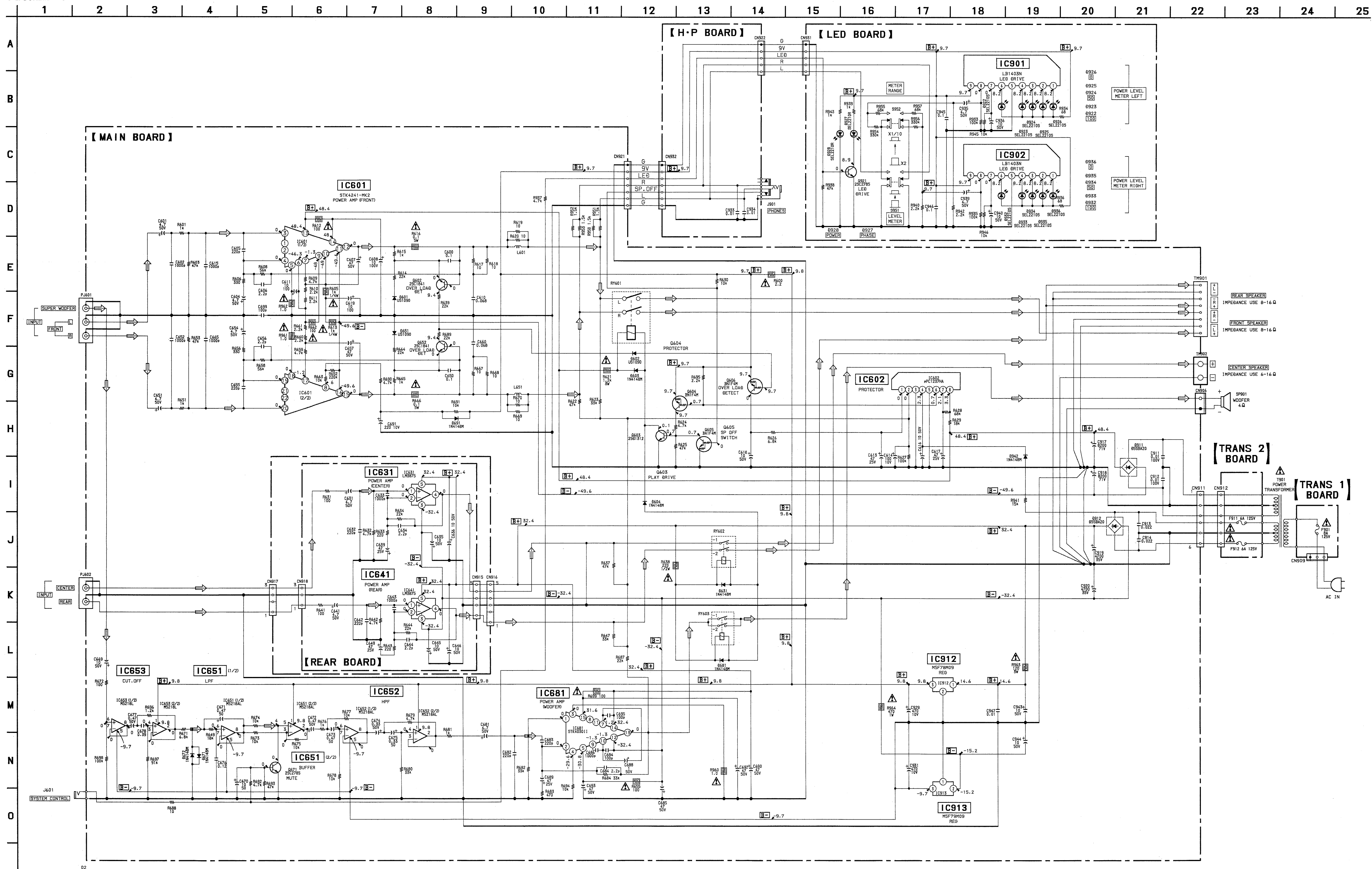
Ref. No.	Location
D601	I - 10
D602	G - 7
D603	I - 9
D604	G - 8
D631	G - 9
D651	J - 10
D671	J - 6
D672	J - 6
D681	G - 9
D691	I - 10
D911	D - 8
D912	B - 10
D922	I - 14
D923	I - 15
D924	I - 15
D925	I - 15
D926	I - 16
D927	J - 16
D928	I - 16
D932	J - 14
D933	J - 15
D934	J - 15
D935	J - 15
D936	J - 16
D942	G - 8
IC601	G - 12
IC602	H - 7
IC631	F - 17
IC641	F - 14
IC651	I - 7
IC652	I - 6
IC653	K - 8
IC681	C - 12
IC901	I - 15
IC902	J - 15
IC912	H - 4
IC913	H - 5
Q602	I - 10
Q603	G - 6
Q604	G - 7
Q605	G - 6
Q606	G - 7
Q652	J - 11
Q671	I - 7
Q921	J - 17

Note:

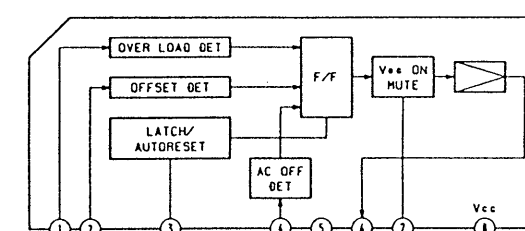
- — : parts extracted from the component side.
- ▒ : Pattern on the side which is seen.



2-2. SCHEMATIC DIAGRAM



IC BLOCK DIAGRAM

IC602 μ PC1237HA

Note:

- All capacitors are in μ F unless otherwise noted; pF: μ F
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : Internal component.
- $\square$: Nonflammable resistor.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- $B+$: B+ Line
- $B-$: B- Line

- Voltage and waveforms are dc with respect to ground under no-signal (disturbed) conditions.
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.

SECTION 3 EXPLODED VIEWS

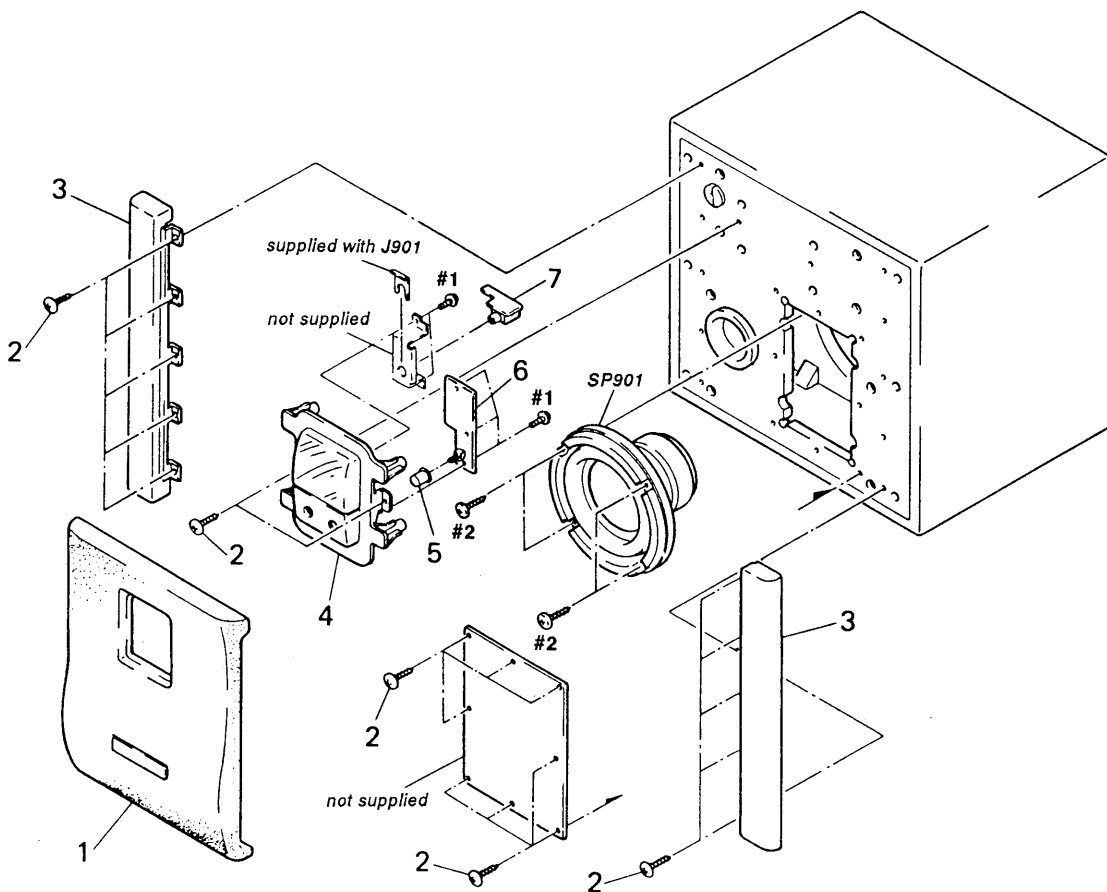
NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

3-1. FRONT SECTION

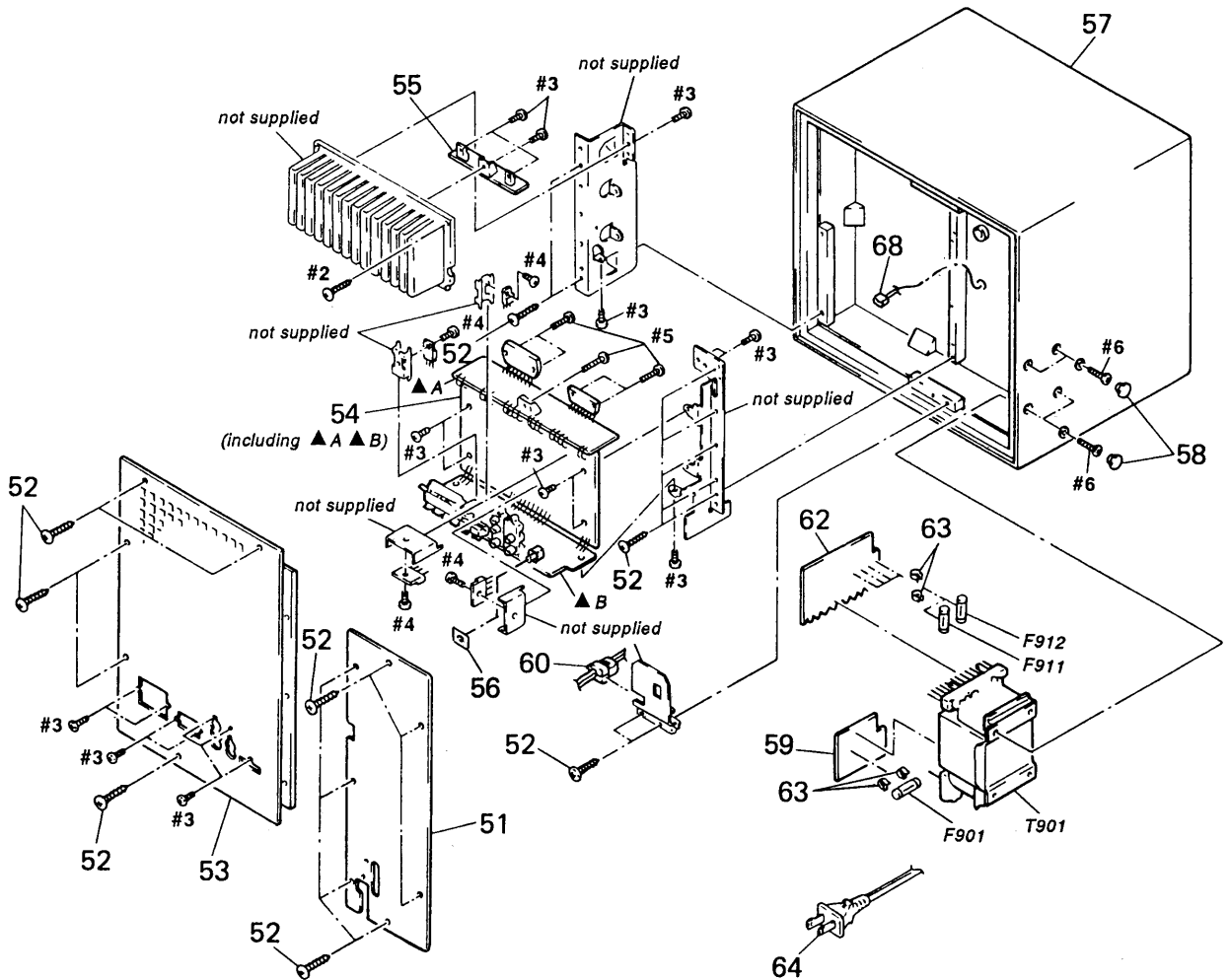


Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
1	X-4945-652-1	FRAME ASSY, GRILLE		5	4-964-705-01	BUTTON (RANGE)	
2	4-929-125-11	SCREW (M4×16), TAPPING		* 6	1-655-199-11	LED BOARD	
3	4-962-846-01	PANEL, SIDE		* 7	1-655-200-11	H. P BOARD	
4	X-4945-579-1	PANEL (A) ASSY, TOP		SP901	1-504-515-11	SPEAKER (20CM)	

3-2. REAR SECTION

▲ A : POWER BOARD

▲ B : JACK BOARD



The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	4-971-589-01	BOARD (S), BACK		* 62	1-655-204-11	PC BOARD, TRANS 2 BOARD	
52	4-874-614-21	SCREW (4) (3.5×14), TAPPING		63	1-533-293-11	FUSE HOLDER	
53	X-4945-724-1	BOARD (L) ASSY, BACK		▲ 64	1-690-609-21	CORD, POWER	
* 54	A-4377-207-A	MAIN BOARD, COMPLETE		68	1-769-278-11	CORD, CONNECTION	
* 55	1-655-201-11	PC BOARD, REAR BOARD		▲ F901	1-532-749-11	FUSE, GLASS CYLINDRICAL (DIA. 5) (8A/125V)	
* 56	4-969-156-01	WASHER		▲ F911	1-576-110-21	FUSE (6A/125V)	
* 57	A-4361-274-A	CABINET ASSY, SPEAKER		▲ F912	1-576-110-21	FUSE (6A/125V)	
58	4-965-090-12	CAP		▲ T901	1-427-803-11	TRANSFORMER, POWER	
* 59	1-655-203-11	PC BOARD, TRANS 1 BOARD					
* 60	3-703-244-00	BUSHING (2104), CORD					

SECTION 4 ELECTRICAL PARTS LIST

H.P **LED**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal oxide-film resistor
F : nonflammable

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, μ : μ , for example :
 μA : μA, μPA : μPA
 μPB : μPB, μPC : μPC
 μPD : μPD
- CAPACITORS
 μF : μF
- COILS
 μH : μH

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description	Remark		
*	1-655-200-11	H. P BOARD *****			
< CAPACITOR >					
C933	1-162-306-11	CERAMIC	0. 01uF	30%	16V
C934	1-162-306-11	CERAMIC	0. 01uF	30%	16V
< JACK >					
J901	1-569-113-11	JACK, LARGE TYPE (PHONES)			

*	1-655-199-11	LED BOARD *****			
< CAPACITOR >					
C935	1-126-963-11	ELECT	4. 7uF	20%	50V
C936	1-124-907-11	ELECT	10uF	20%	50V
C939	1-126-963-11	ELECT	4. 7uF	20%	50V
C940	1-124-907-11	ELECT	10uF	20%	50V
C945	1-164-159-11	CERAMIC	0. 1uF		50V
C946	1-164-159-11	CERAMIC	0. 1uF		50V
< DIODE >					
D922	8-719-304-31	DIODE	SEL4214S (100)		
D923	8-719-304-31	DIODE	SEL4214S		
D924	8-719-304-31	DIODE	SEL4214S		
D925	8-719-304-31	DIODE	SEL4214S		
D926	8-719-304-31	DIODE	SEL4214S (0)		
D927	8-719-304-31	DIODE	SEL4214S (PHASE)		
D928	8-719-304-31	DIODE	SEL4214S (POWER)		
D932	8-719-304-31	DIODE	SEL4214S (100)		
D933	8-719-304-31	DIODE	SEL4214S		
D934	8-719-304-31	DIODE	SEL4214S (50)		

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
D935	8-719-304-31	DIODE SEL4214S	
D936	8-719-304-31	DIODE SEL4214S (0)	
< IC >			
IC901	8-759-801-04	IC LB1403N	
IC902	8-759-801-04	IC LB1403N	
< TRANSISTOR >			
Q921	8-729-119-79	TRANSISTOR 2SC2785-FEK	
< RESISTOR >			
R933	1-249-441-11	CARBON 100K 5%	1/4W
R934	1-249-403-11	CARBON 68 5%	1/4W
R935	1-249-441-11	CARBON 100K 5%	1/4W
R936	1-249-403-11	CARBON 68 5%	1/4W
R938	1-249-437-11	CARBON 47K 5%	1/4W
R939	1-249-417-11	CARBON 1K 5%	1/4W
R940	1-249-421-11	CARBON 2. 2K 5%	1/4W
R942	1-249-421-11	CARBON 2. 2K 5%	1/4W
R943	1-249-417-11	CARBON 1K 5%	1/4W
R945	1-249-429-11	CARBON 10K 5%	1/4W
R946	1-249-429-11	CARBON 10K 5%	1/4W
R954	1-247-891-00	CARBON 330K 5%	1/4W
R955	1-249-439-11	CARBON 68K 5%	1/4W
R956	1-247-891-00	CARBON 330K 5%	1/4W
R957	1-249-439-11	CARBON 68K 5%	1/4W
< SWITCH >			
S951	1-572-714-11	SWITCH, PUSH (LEVEL METER)	
S952	1-572-714-11	SWITCH, PUSH (METER RANGE)	

MAIN

Ref. No.	Part No.	Description	Remark		
*	A-4377-207-A	MAIN BOARD, COMPLETE ***** < CAPACITOR >			
C600	1-136-165-00	FILM	0. 1uF	5%	50V
C601	1-126-963-11	ELECT	4. 7uF	20%	50V
C602	1-162-294-31	CERAMIC	0. 001uF	10%	50V
C604	1-124-910-11	ELECT	47uF	20%	50V
C605	1-162-286-21	CERAMIC	220PF	10%	50V
C606	1-162-191-31	CERAMIC	2. 2PF	10%	50V
C607	1-124-910-11	ELECT	47uF	20%	50V
C608	1-124-667-11	ELECT	10uF	20%	100V
C610	1-130-493-00	MYLAR	0. 068uF	5%	50V
C611	1-124-667-11	ELECT	10uF	20%	100V
C613	1-104-664-11	ELECT	47uF	20%	25V
C613	1-124-477-11	ELECT	47uF	20%	25V
C614	1-126-933-11	ELECT	100uF	20%	10V
C615	1-162-294-31	CERAMIC	0. 001uF	10%	50V
C616	1-124-907-11	ELECT	10uF	20%	50V
C617	1-104-664-11	ELECT	47uF	20%	25V
C617	1-124-477-11	ELECT	47uF	20%	25V
C618	1-124-907-11	ELECT	10uF	20%	50V
C619	1-124-667-11	ELECT	10uF	20%	100V
C650	1-136-165-00	FILM	0. 1uF	5%	50V
C651	1-126-963-11	ELECT	4. 7uF	20%	50V
C651	1-124-927-11	ELECT	4. 7uF	20%	100V
C652	1-162-294-31	CERAMIC	0. 001uF	10%	50V
C654	1-124-910-11	ELECT	47uF	20%	50V
C655	1-162-286-21	CERAMIC	220PF	10%	50V
C656	1-162-191-31	CERAMIC	2. 2PF	10%	50V
C657	1-124-910-11	ELECT	47uF	20%	50V
C660	1-130-493-00	MYLAR	0. 068uF	5%	50V
C665	1-162-294-31	CERAMIC	0. 001uF	10%	50V
C669	1-124-907-11	ELECT	10uF	20%	50V
C670	1-124-907-11	ELECT	10uF	20%	50V
C671	1-124-902-00	ELECT	0. 47uF	20%	50V
C672	1-124-902-00	ELECT	0. 47uF	20%	50V
C673	1-124-902-00	ELECT	0. 47uF	20%	50V
C674	1-124-252-00	ELECT	0. 33uF	20%	50V
C675	1-124-252-00	ELECT	0. 33uF	20%	50V
C676	1-136-166-00	FILM	0. 12uF	5%	50V
C677	1-124-902-00	ELECT	0. 47uF	20%	50V
C678	1-136-172-00	FILM	0. 39uF	5%	50V
C681	1-126-963-11	ELECT	4. 7uF	20%	50V
C682	1-162-286-21	CERAMIC	220PF	10%	50V
C683	1-162-286-21	CERAMIC	220PF	10%	50V
C684	1-162-191-31	CERAMIC	2. 2PF	10%	50V
C685	1-124-910-11	ELECT	47uF	20%	50V
C686	1-162-294-31	CERAMIC	0. 001uF	10%	50V

Ref. No.	Part No.	Description	Remark		
C688	1-124-903-11	ELECT	1uF	20%	50V
C689	1-104-664-11	ELECT	47uF	20%	25V
C690	1-124-910-11	ELECT	47uF	20%	50V
C691	1-104-666-11	ELECT	220uF	20%	10V
C692	1-124-910-11	ELECT	47uF	20%	50V
C693	1-124-910-11	ELECT	47uF	20%	50V
C694	1-162-282-31	CERAMIC	100PF	10%	50V
C695	1-162-282-31	CERAMIC	100PF	10%	50V
C699	1-162-282-31	CERAMIC	100PF	10%	50V
C911	1-106-367-00	MYLAR	0.01uF	5%	200V
C912	1-106-367-00	MYLAR	0.01uF	5%	200V
C913	1-164-097-11	CERAMIC	0.022uF		50V
C914	1-164-097-11	CERAMIC	0.022uF		50V
C917	1-110-592-11	ELECT	8200uF	99%	71V
C918	1-110-592-11	ELECT	8200uF	99%	71V
C919	1-126-955-11	ELECT	4700uF	20%	35V
C920	1-126-955-11	ELECT	4700uF	20%	35V
C929	1-124-472-11	ELECT	470uF	20%	10V
C931	1-124-472-11	ELECT	470uF	20%	10V
C943	1-124-907-11	ELECT	10uF	20%	50V
C944	1-124-907-11	ELECT	10uF	20%	50V
C947	1-162-306-11	CERAMIC	0.01uF	30%	16V
< CONNECTOR >					
* CN906	1-506-944-11	PIN, CONNECTOR 2P			
* CN911	1-506-947-11	PIN, CONNECTOR 6P			
* CN921	1-568-934-11	PIN, CONNECTOR 7P			
< DIODE >					
D601	8-719-815-85	DIODE	1S1585		
D602	8-719-815-85	DIODE	1S1585		
D603	8-719-987-63	DIODE	1N4148M		
D604	8-719-987-63	DIODE	1N4148M		
D631	8-719-987-63	DIODE	1N4148M		
D651	8-719-815-85	DIODE	1S1585		
D671	8-719-987-63	DIODE	1N4148M		
D672	8-719-987-63	DIODE	1N4148M		
D681	8-719-987-63	DIODE	1N4148M		
D691	8-719-987-63	DIODE	1N4148M		
D911	8-719-510-68	DIODE	D5SBA20		
D912	8-719-510-68	DIODE	D5SBA20		
D942	8-719-987-63	DIODE	1N4148M		
< GROUND TERMINAL >					
EB901	1-537-770-11	TERMINAL BOARD, GROUND			
< IC >					
IC601	8-749-010-34	IC	STK4241MK2		

Ref. No.	Part No.	Description	Remark
IC602	8-759-111-68	IC uPC1237HA	
IC651	8-759-634-50	IC M5218AL	
IC652	8-759-634-50	IC M5218AL	
IC653	8-759-634-50	IC M5218AL	
IC681	8-749-940-30	IC STK-4030II	
IC912	8-759-701-59	IC NJM78M09FA	
IC913	8-759-604-43	IC M5F79M09L	
< JACK >			
J601	1-566-819-41	JACK 1P	
< COIL >			
L601	1-420-872-00	COIL, AIR-CORE	
L651	1-420-872-00	COIL, AIR-CORE	
< JACK >			
PJ601	1-764-406-11	JACK BLOCK, PIN 3P (INPUT, FRONT/SUPER WOOFER)	
PJ602	1-764-405-11	JACK BLOCK, PIN 2P (INPUT, REAR/CENTER)	
< TRANSISTOR >			
Q602	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q603	8-729-143-49	TRANSISTOR 2SD1312-LKU-TP	
Q604	8-729-900-63	TRANSISTOR DTA124ES	
Q605	8-729-900-36	TRANSISTOR DTC124ES	
Q606	8-729-900-63	TRANSISTOR DTA124ES	
Q652	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q671	8-729-119-79	TRANSISTOR 2SC2785-FEK	
< RESISTOR >			
△R600	1-249-451-61	CARBON 2.2 5% 1/4W F	
R601	1-249-417-11	CARBON 1K 5% 1/4W	
R603	1-249-437-11	CARBON 47K 5% 1/4W	
△R605	1-249-923-11	CARBON 1K 5% 1/4W F	
R606	1-249-411-11	CARBON 330 5% 1/4W	
R608	1-249-438-11	CARBON 56K 5% 1/4W	
R609	1-249-425-11	CARBON 4.7K 5% 1/4W	
R610	1-249-421-11	CARBON 2.2K 5% 1/4W	
R611	1-249-421-11	CARBON 2.2K 5% 1/4W	
△R612	1-249-405-11	CARBON 100 5% 1/4W F	
△R613	1-249-923-11	CARBON 1K 5% 1/4W	
R614	1-247-863-91	CARBON 22K 5% 1/4W	
R615	1-249-417-11	CARBON 1K 5% 1/4W	
△R616	1-214-789-00	METAL PLATE 0.1 5W F	
R617	1-249-393-11	CARBON 10 5% 1/4W	
R618	1-249-393-11	CARBON 10 5% 1/4W	
R619	1-249-393-11	CARBON 10 5% 1/4W	
R620	1-249-393-11	CARBON 10 5% 1/4W	

Ref. No.	Part No.	Description	Remark
△R621	1-216-481-11	METAL OXIDE 1.2K 5% 3W F	
R622	1-249-437-11	CARBON 47K 5% 1/4W	
R623	1-249-435-11	CARBON 33K 5% 1/4W	
R624	1-249-425-11	CARBON 4.7K 5% 1/4W	
R625	1-249-437-11	CARBON 47K 5% 1/4W	
R626	1-249-427-11	CARBON 6.8K 5% 1/4W	
R627	1-249-441-11	CARBON 100K 5% 1/4W	
R628	1-249-439-11	CARBON 68K 5% 1/4W	
R629	1-249-432-11	CARBON 18K 5% 1/4W	
R630	1-249-429-11	CARBON 10K 5% 1/4W	
R637	1-249-437-11	CARBON 47K 5% 1/4W	
△R638	1-260-091-11	CARBON 220 5% 1/2W F	
R639	1-247-863-91	CARBON 22K 5% 1/4W	
R647	1-249-435-11	CARBON 33K 5% 1/4W	
R649	1-249-432-11	CARBON 18K 5% 1/4W	
R651	1-249-417-11	CARBON 1K 5% 1/4W	
R652	1-247-887-00	CARBON 220K 5% 1/4W	
R653	1-249-437-11	CARBON 47K 5% 1/4W	
△R655	1-249-405-11	CARBON 100 5% 1/4W F	
R656	1-249-411-11	CARBON 330 5% 1/4W	
R658	1-249-438-11	CARBON 56K 5% 1/4W	
R659	1-249-425-11	CARBON 4.7K 5% 1/4W	
R660	1-249-421-11	CARBON 2.2K 5% 1/4W	
R661	1-249-421-11	CARBON 2.2K 5% 1/4W	
△R662	1-249-405-11	CARBON 100 5% 1/4W F	
R663	1-249-429-11	CARBON 10K 5% 1/4W	
R664	1-247-863-91	CARBON 22K 5% 1/4W	
R665	1-249-417-11	CARBON 1K 5% 1/4W	
△R666	1-214-789-00	METAL PLATE 0.1 5W F	
R667	1-249-393-11	CARBON 10 5% 1/4W	
R668	1-249-393-11	CARBON 10 5% 1/4W	
R669	1-249-393-11	CARBON 10 5% 1/4W	
R670	1-249-393-11	CARBON 10 5% 1/4W	
R671	1-249-427-11	CARBON 6.8K 5% 1/4W	
R672	1-247-807-31	CARBON 100 5% 1/4W	
R673	1-249-429-11	CARBON 10K 5% 1/4W	
R674	1-249-429-11	CARBON 10K 5% 1/4W	
R675	1-249-429-11	CARBON 10K 5% 1/4W	
R676	1-249-417-11	CARBON 1K 5% 1/4W	
R677	1-249-429-11	CARBON 10K 5% 1/4W	
R678	1-249-429-11	CARBON 10K 5% 1/4W	
R679	1-249-425-11	CARBON 4.7K 5% 1/4W	
R680	1-249-435-11	CARBON 33K 5% 1/4W	
R681	1-249-417-11	CARBON 1K 5% 1/4W	
R682	1-249-435-11	CARBON 33K 5% 1/4W	
R683	1-249-413-11	CARBON 470 5% 1/4W	
R684	1-249-435-11	CARBON 33K 5% 1/4W	
R687	1-247-863-91	CARBON 22K 5% 1/4W	
R688	1-249-393-11	CARBON 10 5% 1/4W	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN

REAR

TRANS 1

TRANS 2

Ref.No.	Part No.	Description	Remark		
R689	1-247-863-91	CARBON	22K	5%	1/4W
R690	1-249-425-11	CARBON	4.7K	5%	1/4W
R691	1-249-429-11	CARBON	10K	5%	1/4W
R692	1-249-425-11	CARBON	4.7K	5%	1/4W
R693	1-249-437-11	CARBON	47K	5%	1/4W
R694	1-249-429-11	CARBON	10K	5%	1/4W
R695	1-249-421-11	CARBON	2.2K	5%	1/4W
R696	1-249-418-11	CARBON	1.2K	5%	1/4W
R697	1-247-878-00	CARBON	91K	5%	1/4W
R698	1-249-441-11	CARBON	100K	5%	1/4W
△R699	1-249-405-11	CARBON	100	5%	1/4W F
R937	1-249-425-11	CARBON	4.7K	5%	1/4W
R941	1-249-431-11	CARBON	15K	5%	1/4W
R950	1-249-419-11	CARBON	1.5K	5%	1/4W
R951	1-249-419-11	CARBON	1.5K	5%	1/4W
R952	1-249-419-11	CARBON	1.5K	5%	1/4W
R953	1-249-419-11	CARBON	1.5K	5%	1/4W
△R960	1-249-381-11	CARBON	1	5%	1/4W F
△R961	1-249-381-11	CARBON	1	5%	1/4W F
△R962	1-249-381-11	CARBON	1	5%	1/4W F
△R963	1-216-475-11	METAL OXIDE	120	5%	3W F
△R964	1-215-867-00	METAL OXIDE	470	5%	1W F
< RELAY >					
RY601	1-515-741-11	RELAY			
RY602	1-515-920-11	RELAY (24V)			
RY603	1-515-920-11	RELAY (24V)			
< TERMINAL >					
TM901	1-537-376-11	TERMINAL BOARD (SP) (FRONT/REAR SPEAKER)			
TM902	1-536-707-21	TERMINAL BOARD, PUSH 2P (CENTER SPEAKER)			

*	1-655-201-11	REAR BOARD			

< CAPACITOR >					
C631	1-126-963-11	ELECT	4.7uF	20%	50V
C632	1-162-286-21	CERAMIC	220PF	10%	50V
C634	1-162-191-31	CERAMIC	2.2PF	10%	50V
C635	1-124-907-11	ELECT	10uF	20%	50V
C636	1-124-907-11	ELECT	10uF	20%	50V
C639	1-104-664-11	ELECT	47uF	20%	25V
C641	1-126-963-11	ELECT	4.7uF	20%	50V
C642	1-162-286-21	CERAMIC	220PF	10%	50V
C643	1-162-294-31	CERAMIC	0.001uF	10%	50V
C644	1-162-191-31	CERAMIC	2.2PF	10%	50V
C645	1-124-907-11	ELECT	10uF	20%	50V
C646	1-124-907-11	ELECT	10uF	20%	50V

Ref.No.	Part No.	Description	Remark		
C649	1-104-664-11	ELECT	47uF	20%	25V
< CONNECTOR >					
* CN915	1-564-508-11	PLUG, CONNECTOR 5P			
CN918	1-564-506-11	PLUG, CONNECTOR 3P			
< IC >					
IC631	8-759-085-89	IC LM3875-S			
IC641	8-759-085-89	IC LM3875-S			
< RESISTOR >					
R631	1-247-807-31	CARBON	100	5%	1/4W
R632	1-249-425-11	CARBON	4.7K	5%	1/4W
R633	1-247-815-91	CARBON	220	5%	1/4W
R634	1-247-863-91	CARBON	22K	5%	1/4W
R641	1-247-807-31	CARBON	100	5%	1/4W
R642	1-249-425-11	CARBON	4.7K	5%	1/4W
R643	1-247-815-91	CARBON	220	5%	1/4W
R644	1-247-863-91	CARBON	22K	5%	1/4W

*	1-655-203-11	TRANS 1 BOARD			

< CONNECTOR >					
CN909	1-564-321-00	PIN, CONNECTOR 2P			
< FUSE >					
△F901	1-532-749-11	FUSE, GLASS CYLINDRICAL (DIA.5)			(8A/125V)

*	1-655-204-11	TRANS 2 BOARD			

	1-533-293-11	FUSE HOLDER			
< FUSE >					
△F911	1-576-110-21	FUSE (6A/125V)			
△F912	1-576-110-21	FUSE (6A/125V)			

MISCELLANEOUS					

△64	1-690-609-21	CORD, POWER			
68	1-769-278-11	CORD, CONNECTION			
SP901	1-504-515-11	SPEAKER (20CM)			
△T901	1-427-803-11	TRANSFORMER, POWER			

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
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ACCESSORIES & PACKING MATERIALS

	3-798-202-21	MANUAL, INSTRUCTION (ENGLISH)	
*	4-964-155-01	CUSHION (UPPER)	
*	4-964-156-01	CUSHION (LOWER)	
*	4-974-293-01	INDIVIDUAL CARTON	

HARDWARE LIST

#1	7-685-134-19	SCREW +PTPWH 2.6×8 (TYPE2)
#2	7-621-846-58	SCREW (4×20), TAPPING
#3	7-685-647-79	SCREW +BVTP 3×10 TYPE2 N-S
#4	7-685-646-79	SCREW +BVTP 3×8 TYPE2 N-S
#5	7-685-650-79	SCREW +BVTP 3×16 TYPE2 IT-3
#6	7-682-666-09	SCREW +PSW 4×20

